

Hardware River TMDL Modification Public Meeting

Thomas Jefferson Soil and Water Conservation District Office, Charlottesville

September 2, 2015

Attendees

Andy Wilson	Karen Kline (VA Tech)
John Thompson (VCE)	Nesha McRae (DEQ)
Brian Walton (TJSWCD)	Tara Sieber (DEQ)
John Lipinski (NRCS)	Don Kain (DEQ)

Meeting Summary

Nesha McRae (DEQ) began the meeting with an overview of the TMDL development process in the Hardware River and the impact of the modifications on this process and the TMDL document. The Hardware River TMDL was completed in 2007 and implementation plan (IP) development began in 2015. In late May 2015 (during IP development), a series of errors were uncovered by VA Tech in the modeling that was done in support of the TMDL. Upon discussion with DEQ, it was determined that these errors were significant enough to require formal modification of the TMDL. DEQ staff explained that the changes made to the TMDL do not appear to have a large impact on the TMDL IP with respect to the extent of BMPs that need to be implemented in the watersheds. A handout was distributed showing changes in the percent reductions for each land use following modification of the TMDL. It was noted that it is difficult to compare the changes in percent reductions because the groupings of subwatersheds in the Hardware River changed during TMDL modification, meaning that the new reductions are applied to different land areas than the old reductions.

DEQ discussed impacts on the IP development timeline. The IP cannot go to public notice until EPA has approved the modified TMDL. There will be a 30-day public comment period on the modification, and it is expected that getting EPA approval will take several weeks. IP development will continue in the meantime, with a steering committee meeting to review the draft IP in late September/early October. DEQ hopes to have the final public meeting for the project in late fall/early winter.

Karen Kline (VA Tech) described the errors that were found in the model and what was done to correct them. Karen explained that the original TMDL lumped the North Fork Hardware together with the South Fork Hardware and broke the mainstem out by itself. However, the South Fork Hardware is not impaired and drains to the mainstem, not the North Fork. This error was corrected by changing the groupings to lump the SF Hardware in with the mainstem since it is within the mainstem drainage area and should be included in the TMDL for the Hardware mainstem. The North Fork Hardware was broken out by itself. In addition, Karen explained that there was an error in the routing in the model. The model had Reach 3 (sub-shed 3) in the North Fork Hardware Watershed routing to Reach 1 (sub-shed 1) in the North Fork Hardware Watershed. However, Reach 3 is the outlet of the NF Hardware and Reach 1 is the outlet of the SF Hardware. These reaches should both have been routed to Reach 24 (sub-shed 24) of the Lower Hardware Watershed. This was corrected and the simulated flow values show a slightly better fit with the observed flow measured at the USGS gage on Hardware River.

In addition to the errors with hydrology in the model, several mistakes were made in identifying population numbers when the number of subwatersheds in the NF Hardware and SF Hardware was changed from 24 to 20. Population numbers were not correctly transferred when this was done during TMDL development. This was corrected during the modification.

Residential bacteria loads (pets and septic systems and straight pipes) were also left out in the Lower Hardware River watershed in the original TMDL. As a result, direct deposition loads for livestock and wildlife were increased during model calibration to get the model to accurately predict bacteria concentrations based on observed data collected at DEQ monitoring sites. Karen shared water quality data collected by DEQ for the watersheds prior to TMDL development. She explained that violations of the bacteria water quality standard in the North Fork Hardware were occurring during all levels of precipitation. However, in the mainstem, violations were occurring after rainfall events suggesting that livestock and wildlife in the stream were not the driving force behind the water quality impairment in this section of the river. These data were in conflict with what was done in the earlier version of the TMDL with respect to increasing direct deposition loads from wildlife and livestock in order to get simulated water quality data to match observed data.

Karen reviewed predicted bacteria loads from different sources of the watershed at the edge of the stream and at the watershed outlet. She showed how these loads changed once the errors in the TMDL were corrected. She cautioned the group that the loads before and after the modification are not truly comparable though since the land areas to which they apply also changed (the mainstem Hardware watershed grew with the addition of the South Fork, whereas the NF Hardware watershed decreased with the SF being removed).

One participant expressed a concern that the reductions shown in both the TMDL and de-listing reduction scenario (0% and 10.5% violation rates, respectively) were not achievable. Nesha explained that during IP development, an interim scenario was selected that was less extreme than the de-listing and TMDL scenarios. This was done based on input from the working groups in order to provide more reasonable implementation goals.

Karen shared the final TMDL values both before and after the modification. She explained that another error was uncovered in the original TMDL with respect to the final equation. The old value is much greater than the modified value due to the fact that edge of stream loads were used in the original TMDL. The TMDL should be based upon loads at the watershed outlet in order to account for die off in bacteria that occurs as it is transported downstream.

DEQ staff asked the group for suggestions on how to share this highly technical content with the public when the final public meeting for the TMDL IP is held. It was suggested that the fact that errors were made and corrected should be recognized, and the impact on the TMDL IP should be summarized. Much beyond that would be too complicated. It was also noted that DEQ staff make sure that the modified TMDL was available online.

DEQ staff thanked everyone for attending and the meeting was adjourned.

